Environmental Performance Measure Development

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Background

- **Need for set of consensus indicators which reflect integration of ISMS with Environmental Management System (EMS) philosophy identified by EFCOG Environmental Subgroup at August '00 Meeting**
- **Agreed that indicators should**
  - Emphasize pollution prevention/waste minimization
  - Be leading indicators, to the extent possible
  - Reflect benefits of an integrated SMS/EMS (improved environmental performance, reduced waste generation)
  - Recognize that regulatory compliance and elimination/reduction of environmental incidents (noncompliance, reportable releases, etc.) is minimal expectation

Performance Measure Team

- Following individuals volunteered to work on this task
  - Jack Gerber, Westinghouse (WVDP) (Lead)
  - David Carroll, Battelle (PNNL)
  - Robert Fox, University of California (LBNL)
  - Susi Jackson, University of California (LLNL)
  - Dan Robertson, Westinghouse (WIPP)
  - Tom Starke, University of California (LANL)
  - Brian Thompson, University of California (LANL)
  - Steven Woodbury, DOE HQ (EH-41)
  - Marty Litus, Bechtel - B&W Inc. (INEEL)

Development Process

- Questionnaire was developed to collect initial information from those on the team
- Questionnaire designed to reflect
  - USEPA Categories and Aspects (based on Performance Track Application)
  - ISMS Core Functions
  - Additional Categories/Aspects unique to DOE facilities
- Information received was compiled into table format

Example Page from Table

EFCOG Environmental Working Group – Performance Measure Subgroup
Environmental Performance Measures

Category[1]	Aspect(1)	Units of Measure(1)	Performance Measure	ISM Function
ENERGY USE	Total Energy Use	BTU, MMBTU	Electrical usage/total site funding (LANL)	1, 2, 3, 4
		Cubic feet	Area of unused facilities (heated space)/total funding (LANL)	
		Percent reduction	Reduce building energy consumption from baseline levels (1985) levels by 20% in FY 2000, and by 30% in FY 2005. (WIPP)	
		Percent reduction	Percent reduction in energy consumption as gross BTU's per square foot (INEEL)	
		Percent reduction	Reduce energy consumption by 20% for buildings by 2005 and 30% for industrial facilities by 2010 using a 1985 baseline (INEEL)	
		Gallons	Measure petroleum consumption and the increased use of alternative fuel (INEEL)	
WATER USE	Total Water Use	Gallons	Water usage/total funding (LANL)	1, 2, 3, 4
		Kg/$	Waste water generation/total funding (LANL)	
MATERIALS USE	Total Materials Use	Tons, Metric Tons		1, 2, 3, 4
		Kg/$	Vehicle petroleum usage/total funding (LANL)	
		Kg/$	Asbestos inventory (kg)/total funding (LANL)	
		Kg/$	Excess materials/equipment stored on site(kg)/total funding(LANL)	
		Percent	Miles of roads maintained/total funding (LANL)	
		Percent	Total alternative vehicle/total vehicle fleet (LBNL)	

Additional Development

- **After gathering and compiling data from the base team members it was decided to collect additional data from as many sites as possible**
- **Sites that provided information included:**
  - **Los Alamos National Laboratory**
  - **Waste Isolation Pilot Plant**
  - **Idaho National Engineering and Environmental Laboratory**
  - **Lawrence Berkeley National Laboratory**
  - **West Valley Demonstration Project**
  - **Savannah River Site**
  - **Pacific Northwest National Laboratory**
  - **DOE HQ**

Additional Development

- **The additional data was added to the initial table**
- **An evaluation was conducted to identify those performance measures which seemed to**
  - **Be commonly used at multiple sites**
  - **Reflect pollution prevention/waste minimization**
  - **Be practical from a data collection and reporting perspective**
  - **Be leading in nature**

Summary of Draft Set of Indicators

- Total Energy Use - % reduction in energy use (electrical, petroleum products, etc.)
- Recycled/Re-Used Materials Use - recycled-content products purchased, amount of materials recycled, green procurement
- Waste Minimization (Total Solid Waste Reduction) - % reduction in hazardous, radioactive, industrial, and/or sanitary waste
- Release History - number of reportable releases (State or Federal) to the air, ground, water
- Environmental Incidents - number of environmental occurrences or reportable environmental events
- Regulatory Compliance - % compliance with regulatory agreements and commitments, number of Notices of Violation
- Pollution Prevention - % reduction in airborne, liquid effluent releases and/or TRI chemicals

Remaining Actions

- Provide current list to the EFCOG Environmental Subgroup for final review and approval
- Determine need/desire for developing data collection and reporting guidelines for use across complex